

MEDICAL INCUNABULA
and the
DIFFUSION OF SCIENTIFIC KNOWLEDGE
Incunabula in the National Library of Medicine



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by

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All illustrations are from original works in the incunabula collection of the National Library of Medicine. The zodiacal illustration on the front cover is from Anianus: *Compotus cum commento*. [Lyons] Matthias Huss [ca. 1492]. The portraits on page 1 were taken from Schedel, Hartmann: *Liber chronicarum*. Nuremberg, Anton Koberger, 1493. Initial "T" is from Montagnana, Bartolomeo: *Consilia medica* [Venice] Bonetus Locatellus, 1497.



he computer terminals that serve patrons in a medical library are one result of the electronic revolution that has completely changed the field of health science communications. Computerized literature retrieval systems produce needed information in a matter of minutes. A somewhat comparable revolution occurred about 530 years ago. In 1454, one year after the fall of Constantinople, the first European book printed with movable type (and bearing a date) appeared.

From the beginning of our civilization man has searched for methods of communication. Cave drawings and paintings were followed by carvings in stone, then by writing on vellum and on paper. Thousands of scribes spent lifetimes writing to spread the word. Even so, by the end of the Middle Ages the manuscript trade could no longer keep up with a greatly expanded reading public. The answer to increased literacy and to the growing demand for religious, artistic and instructional matter was movable type.

Incunabula is the term used to identify texts printed with movable type before 1501. The Latin word *incunabula* means the apparatus of a cradle, regarded as the symbol of infancy. The child, the printed book, was born in Mainz or in that area around 1450, and the next 50 years constitute its period of "infancy."

Johann Gutenberg's invention spread quickly, first to neighboring towns and then to many European cities. Albrecht Pfister introduced printing to Bamberg, Johann Mentelin to Strassburg, Ulrich Zell to Cologne. Two German clerics, Konrad Sweynheym and Arnold Pannartz brought printing to Italy — printing first in Subiaco, and by 1467 in Rome. Printing was introduced to Switzerland around 1468, to France in 1470, to Spain and the Low Countries in 1472. William Caxton introduced printing in England in 1476-7. These printers initially concentrated on theological and legal works as well as on classics in demand at the time. In 50 years approximately 40,000 editions were printed, totalling 6,000,000 copies. Science and medicine reached readers mainly after the market has been glutted with other works. This enormous escalation of output, referred to by many as the *diffusion of knowledge*, may be compared only with the computerized *dissemination of information* of our time.

The earliest printed medical book is generally accepted to be Jean Charlier de Gerson's tracts on self-abuse titled *De pollutione nocturna*, printed in Cologne by Ulrich Zell in around 1466. The National Library of Medicine owns the second edition of this work, also printed by Zell around 1467. In the latter year Hrabanus Maurus' *De sermonum proprietate; sive, Opus de universo* was printed by Adolf Rusch in Strassburg. The work describing the universe includes a chapter on medicine titled *De medicina*. The Library has the first edition of this work.

Hippocrates medicus



Aristoteles



Galienus medicus



Arnaldus de villa nova



Petrus de abano paluator



Incipit Tractatus venerabilis Magistri
Johannis Gerson cancellarii parisiensis tractatus
de pollutione nocturna. an impediatur celebra-
tio vel non.

Vbitatu est apud me frequenter
et diu pfectim post susceptu sacer-
dotiu. si quis nocturno pollutus
sopio a celebrando missam cessa-
re deberet. Exptus su similit multos pfectim
religiosos. et nouissime quosda pre cetis tali
dubitacois scrupulo no paru turbatos. du
ex vna pte eos ad celebrandu trahit deu-
tio. ex altera timor offense reprimat. Tandem
effectus sup hac re certior. tu ex doctoru sacro-
ru lectione. tu exptoru et virtuosoru consulta-
cone et exeplo tu postremo ex ipa raconis et
experimentalis cognicois attestacoie induat
su ut consideracoes aliqs breues et no pfus
inutiles sup hac celebraois mateia opone-
rem. eas iudico melius et sincerius sapietu
supponedo. Consideraconu hmoi qued erit
accessorie. et qued p directu rnsue. Precor
autem dari venia si forsitan impurius loque-
dum erit quoma morbus talis est qui vir-
aliter detegi vir pulchrioribus medicamen-
tis sanari potest

Sequitur Consideraco prima

Gerson, Jean Charlier de. *De pollutione nocturna. De
cognitione castitatis et pollutionibus diurnis.* Cologne,
Ulrich Zel, ca. 1467. Title page of second edition.

From 1467 on, medical books, and books in
related fields, appeared in a growing number of
European cities. Arnold C. Klebs' *Incunabula scien-
tifica et medica* lists 1060 individual works (in ap-
proximately 3000 editions in all), of which some
900 can be classed as medical. The National Library
of Medicine has 516 works, in 537 editions, printed
before 1501. Most of these medical and scientific
books were printed in prospering cities that were
close to universities. It is therefore not surprising
that the printers of Venice published more than 550
editions. Rome followed Venice, producing about
227 editions, Paris 214, Leipzig 204, Augsburg 179,
Cologne 156, Lyons 136, Strassburg 101, Antwerp
95, and Nürnberg about 93 scientific and medical
editions. In 50 years the printing of scientific and
medical books spread to more than 120 cities.

The output of medical works was decided by the
printers, and the printers were businessmen, whose
goal was to meet the needs of their customers. The
public's demand can be determined by the output
of the manuscript trade, which was well established

Capitis prioris. Particula prima. Modus cognoscendi probemialis.

- 1 Ita brevis/ars aut longa/tepus acurū ex
perimētū fallax/iudiciū vero difficile 1
- 1 Et vine et egestiones et sudores et discras
et eucritas/longas et breues egritudines ap-
parentia declarant. 13
- 1 Paroxismos et consistencias declarant egritudines et
tpa anni et circuitu adinuicē incrementa siue p diem siue
post triduū siue p amplius tempus fiant. 13
- 1 In exercitantibus ad summū bone habitudines fal-
laces si i vltimo fuerint: nō enim pnt manere in eodem
neq̄ quiescere/qui vero nō quiescūt nequaquā possunt
addere in melius/relinquūtur igitur ad peius. hōz
ergo causa bonā habitudinē solue cōfert/nō tarde/vt
rursus principiū nutrimenti accipiat corpus/ neq̄ com-
pressiōes ad vltimū facere/fallaces enim sūt Sed qua-
lis fuerit natura sustinere debētis. ad hoc ducere/vt vi-
res possint tolerare. Similit et inanitiōes ad vltimum
fallaces: et iterū resumptiōes i vltimo fallaces. 3
- 2 In omni egritudine confortari mente et bene se ha-
bere ad oblatiōes/bonū: contrarium vero malū. 33
- 2 Nō plenitudo/nō indigētia neq̄ aliud: quodcuq̄
magis natura fuerit nihil bonum. 4
- 2 Que multo tempore extenuantur corpora/tarde re-
uerit consueuerūt que vero modico/modice. 7
- 2 Nō fm rōnē alleuiatis nō opet credere nec vereri
malavalde que sūt irrōnabilt. mltā enī taliū sūt icerta
et nō valde pmanere neq̄ morari cōsueuerūt 27
- 2 In morbis minus periculātur egrorātes quibuscūq̄
q̄ ppria nature etat et habitudinis et hore egritudo in-
est magis quā quib⁹ nō ppria fm aliq̄ horū inest. 34
- 3 Crassū valde fm nām cito moriūt magis gūlib⁹ 44

Hippocrates. *Aphorismi, sive Sententiae.* [Nuremberg,
Caspar Hochfeder, 1496.] Third page of second edition.

by the middle of the fifteenth century. The printer
had some estimate of the quantitative demand for
books and had some idea of what kind of books
the public was interested in. Thus the printer was
essential not only in the *diffusion of books* but also
in the *diffusion of knowledge*.

In the field of science the two most-published
authors were Albert the Great (Albertus Magnus)
and Aristotle. Albert the Great's popularity was
based mainly on his *Secreta mulierum* (a work on
cosmetics) and his *Liber aggregationis* (a book on
the virtues of herbs, stones and animals). Of the lat-
ter, the Library has 5 editions, the earliest published
in 1483. The *Secreta mulierum et virorum* is
represented by 7 editions, the first printed by Adam
de Rottweil in Venice, in 1478. The richness of the
Library's collection is reflected in other important
works by Albert the Great, including his *De anima*,
De animalibus (both in 2 different editions), *De
generatione et corruptione*, *Mariale*, *De
mineralibus*, *Philosophia pauperum* in 3 editions,

Epistola Rabani ad Ludouicum regem
inuidiſſimū &c. incipit feliciter.



OMINO excellē
tissimo & omī ho
nore dignissimo lu
douico regi Raba
nus vilissimus ser
uoz dei suus eter
ne beatitudinis i
xpo optat salutē.
Audita bona opi
nionē vestra : quē

pdicatur p totas prouincias germanie atq
gallie & pene in cunctis ptibus europe cre
bris laudibus insonat satis exulto. & domi
ni misericordiā imploro. quatinus hoc cum
bono augmēto ad salubrē finem puenire con
cedat. Obhoc quippe laboris mei opusculū q
i fucium xpi ipsius largiente gracia sacras
scripturas exponēdo put potui expendi non
sine vſa cōmuniōe habere volui: sed aliquos
traſatus atq; cōmentarios in diuinis libris
cōscriptos vſe ueneracioni direxi. Nuper q
quia vos qndo in pſencia vestra fui cōptum
vos habere dixistis aliquod opusculū me no
uiter cōfecisse de fimonū pprietate. & misti
ca rerū significacione. Quod etiā a mea par
uitate postulastis vobis dirigi. Feci libentē qd
petistis. & ipsū op9 vobis in vigintiduobus
libris termiatū trāsmisi: vt si serenitati vſe
placuerit corā vobis relegi illud faciatis. &
si aliquid in eo dignū emēdacione reptū fue
rit cū vestris sagacissimis lectorib: put ra
cio dicat illud emēdare curetis. Sunt enim
in eo plura exposita de rerū naturis: & ver
boz pprietatibus. nec nō etiā de mystica re
rū significacione. Quod idcirco ita ordinan
dum estimauī. vt lector prudens continuatī
positā inueniret historicā & mysticā singula
rum rerum explanacionem: et sic satisfacere
quodāmodo posset suo desiderio in q & hy
storie & allegorie inueniret manifestacionē
Vnde mihi non melius aliud videbat huius
opis sumere incipium quā ab ipso cōditore no
stro qui omnū rerū est caput & principium
quia quicqd naturaliter subsistit: aut auctor
& creator omnū est: aut ab eo condita crea
tura. quia ex ipso & p ipso & in ipso sūt om
nia: qui fecit celum & terrā mare & omnia
que in eis sūt. Sic ergo p̄mum de ipso sūmo
bono & vſe cōditore nostro: hoc est patre et
filio & spiritu sancto. vno & solo omnipoten
te deo iuxta p̄uitatē ingenii mei qntum di
uina grā me posse concessit scribendo aliqua
dixi. Postea vero de celestibus & trestri

bus creaturis non solū de natura: sed etiā de
vi & effectibus eaz. sermonem habere insti
tui. vt lector diligēs in hoc ope et nature p
prietatē iuxta historiā et spiritālē significa
cionē iuxta mysticum sensū simul posita inue
niret. Et quia de sanctis hominibus: qui in
veteri & nouo testamēto cōmemorant eozq
actionibus mysticis necnon & de locis in qui
bus habitabant. silere me: nō cōuenit. nomīa
ipsoz simul et locoz ex hebraica lingua in la
tinā trāſferre placuit. vt inde facilius my
sticam significacionē explanare possem. Ad
didi q in presenti opusculo non pauca. de fi
de catholica & religione cristiana. & ecōtra
rio. de gentiliū supersticione. & hereticorū
errore d philosophis & magis atq; falsis diis
de linguis genciū. de regnis militum ciuū
q; vocabulis atq; affinitatibus. de homine &
ptibus eius. & reliquis animātibus. de lapi
dibus lignis & herbis: que in tra gignantur
de variis artibus atq; artificiis & aliis mul
tis: que omnia in p̄hemio enumerari longū
est. Proinde quod de his hic posui nūc suffi
ciat. ceterū autē in capitulis singuloz libroz
diligēcius ea enumerare curauī. Decreui enī
hoc totum op9 vt sup̄ dixi in vigintiduos li
bros dispertiri. sub quo numero vetus testa
mētum legis diuine interpretes beatus hiero
nimus cōplexum se asseruit: ex cuius interp
tacione et exposicione quedā obscura in hoc
ope elucidauī. Tu autē electe dñe & regum
karissime. acceptis his que tibi trāsmisi vte
re eis vt decet. et tā tibi quā illis qui sub tuo
regimine sūt cōstituti. ea vtilia esse pmitte:
quatinus tuū bonum studium multis pueni
at ad spiritālē pfectum. et fiat tā tibi quam
illis spiritale exerciciū atq; celestis gaudiū in
cremētum. Imitare illius sapiētis viri exem
plum: qui de sapiēcie laude ptulit tale p̄co
nium dicens. Inuocaui et venit in me spirit9
sapiēcie. & preposui illā regnis et sedibus et
diuicias nihil esse dixi in cōpaciōe illius nec
cōparauī illi lapidem p̄ciosū. quoniam omne
aurū in cōparacione illius harena ē exigua.
& tanq; lutum estimabit argentum in cōſpec
tu illius. Sup̄ salutem et speciē dilexi illā. et
pposui p luce habere illā. quoniam inextin
guibile ē lumen illius. Venerunt autem mihi
omnia bona pariter cū illa. & innumerabilis
honestas p manus illius. Et letatus sū in om
nibus quoniā antecedeat me ista sapiēcia.
Qua sine fictione didici: et sine inuidia com
munico. & honestatem illius non abscondo.
Infinitus enī thesaurus ē hominibus. Quo
qui vli sūt. participes facti sūt amicicie dei.
quomodo ipse sapiēcie dux est. & sapiēcium



Doctrina.III.

Itud qd supat canulā caute
riqat: loca alta canula que
trigida est a leione defidit.
C⁶m dactulare: eo qd est sem ad formā ossis dactiloz: z
cauterizaf ide ancha: z est istz sem sic vna tabula ad for
mā tūture a che magne: z hēt. v. eminētias: sic ossa dacti
loz: scāo: qm vna ē i medio: due sup: vna infer: vna ab
utraq: parie siue latere sic.
Ita qn calefit istz: hōpōit sup
āch i mediāte vna tabula su
peri^o posita scā hō mēsurā. v. eminētiaz ad opposita pforate
z qd tabula ista fit trida z ē sic scā
z nātī vna tm pōitōe. v. caute
ria sup āch: ita qd duo sint ex
pte sup lortūture duo a laterib^o z vnu uere sup i spaz tū
cturā: z aliud in pte inferi. C⁷m dō cauteriū dī triagu
lare: qd pnt fieri tria cauteria vno tactu: z habet filz lo
cum in ancha: z est sic factus.
C⁸m dō acuale: eo qd alitq
fi cū acuz: hēt locū ad caute
rizandum in palpebris: de quibz pll supstū sunt euol
ti: z est factum sicut acus sic.
C⁹m cauteriū dō linguale: z
est factum sicut vna lingua sic:
z hō locū ad cauterizādū carnē
sup iud palpebrāz. C¹⁰m cau
teriū uale ad sectionē z fit cū
tenaculo pforatis: in qm foraminib^o possit intrare instm
acutū hō se nestrā ut acus: z forma tenacule est sic facta.
Et forma acus qul ha
bet intrare per fora
ramina tenacule est
facta sic.
Et pellis appbēdē cū
tenaculo fridū: ubi
uolum^o sectionē ponē iter tenaculo pellē illā frigidū: z
ferrū calz p tenaculū foramina inijcīm^o z pellē cōburim^o
a tenaculo cōpōit. Deinde choudā lenē filoz scāz i saguie
ritā mittim^o i foramina: choudā i duob^o capitib^o postea
ne cūm^o z pūm^o dōc uolum^o sigillare: hō mēu cōe cau
teriū: z hō locū i ore sicut sup eor^o z spē z testicor^o burfā
formis istoz z corū positis i nomib^o ad qd z
ubz qn debet fieri pūctaria cauteria videā
m^o. C¹¹m In antiq^o cephalē qn purgatōes p mediciaz la
moribz breuiter defecdam^o. C¹²m Scias qd cauteria nui
plima in dūsis pilb^o cois: z fm dūtitatē locoz ouerle
forme pueniūt istoz: z modus uari^o impmēdi. C¹³m For
me pō cauterioz qd fm Albucāsim ualde mltiplicent
pūctier bonū est i illos oēs repetēti: qd liber iste breui
tate diligit: put pōt reducā oēs cauteriū formāz ad. x. qd
hic vidē poteris depictas z signatas. C¹⁴m Scimus qd est
magis cōe z magis in usu dō anodulū seu pūctuale: est
istm qd ponit p vnu foramē qd est in alio ferro plano
qd nō calefit: est ita factū: qd ferrū fridū uō pūm^o calz
ultra intrare: nisi fm qd medicū placeat nolūit. Ferrū enī
qd calefit hēt vnu additāmū pūā ad uolūtātē medicū sic.
Ferrū planū in quo intrat illud
additāmētū: fridū ponit sup
locū cauterizādū: z est sic factū.
Additāmētū est calū donec al
bescat z pūctat scintillaz: z im
pūm^o in foramine istū latū sup
mēbz: z facit ibi uelcā: qd remota remanet ibi ulc^o. C¹⁵m Itē
vō dōc modus. Facto cauterio ponit ibi assigū antiq^o
uel buyrū: uel assigū pūctatā cū folijs caulū: qd est me
li^o donec crusta cadat quā calidū facit ferrū: postea ponit
tur in ulcē pūctatā pua facta de pāno lineo z rotunda satis
dura que vngit in sagimine uel oleo. Sup pūctatā ponit
tur foliū caulū rub. uel vitis uel bedē arbore: qd alijs ē
meli^o: z qdū placet dimittit opari. C¹⁶m cauteriū rotun
dū: z hō bēt additāmētū ita lōgū: qd est nectū qn solā
cutē vīs tāgē: itmēs ne neruū tāgās. Et hēt locū cū mēbz
neruofū vīs cauterizāre: z sic fēz
ut possit a duob^o cauterizāre capi
tib^o: fm qd magnā uel pūā deinde
ras cocturā. C¹⁷m cauteriū est pūctuale seu radiale: z est
necessariū ubi ualde stricte uolueris facere cauteriū ut
in pillo: z sic est factum.
C¹⁸m cauteriū est ualde cōc:
z oleis cūtellare: z est necessa
riū cū lōgā vīs facē cocturā: ut per trāsfurum capitis: z
quando vīs ulcera rotunda cruris ad formam reducere
longam: z est sic factum.
C¹⁹m uocat subtile: z hoc est
necessariū ad coquendū fistu
las pūctū oculi z malā carnē exiit i naso: z ponit p vna
canulā scāz ut audies: z ē sic fēz
hoc subtile calefit: z calefactus
ponitur in canula sic.

two printed by the Brescian Baptista Farfengus and one in Venice by Georgius Arrivabenus. In addition, the Library has the *Logica* published in Pavia around 1490. The *Logica* is not in Klebs, but is generally considered to be a scientific work. Aristotle is represented in the collection by the first edition of his *Opera* (in Latin, without the commentary), published in Augsburg by Ambrosius Keller in 1479. The Library has 3 of the 4 existing editions of *De animalibus*, including the first edition published in Venice by Johannes de Colonia and Johannes Manthen in 1476. The *Problemata* is present in the collection with 3 editions, and the *Secreta secretorum* with 2 editions.

These two authors dominated the western spiritual and scientific world. Hippocrates ranks a distant third among popular authors of scientific and medical incunabula, based on the number of editions printed. Such a giant of early medicine as Galen ranks twenty-eighth and Guy de Chauliac, the most distinguished authority in the field of surgery, ranks forty-eighth based on the number of their books printed before 1501.

Some of the most popular authors were Arnaldo de Villanova (among other works by him the Library has three editions of his popular work titled *Breviarium practicae medicinae*), Anianus (whose *Compotus manualis cum commento* was published in 37 editions in 3 series) and Rhazes (the Library has the first edition of his *Liber ad Alman-sorem*, published in Milan in 1481).

No doubt the most popular medical book, based on the number of editions printed, was the *Regimen sanitatis*. The regimen contains a series of hygienic and dietetic instructions dedicated to either the King of France or the King of England. The Library has the first edition of the work, printed in German in 1472, in Augsburg. The origin of the work is unknown, but according to Sudhoff it may have been based on a pseudo-Aristotelian epistle to Alexander the Great.

Prologus



The second, third and fourth numbers on the best seller list of scientific incunabula are all attributed to Albert the Great. These are the *Liber aggregationis*, *De mirabilibus mundi* and *De secretis mulierum*. Albert von Bollstädt, the Dominican monk who later became Bishop of Ratisbon and was called Albert the Great or Albertus Magnus, did not write on medical practice, as that was forbidden to the Dominicans, but he was probably the most outstanding naturalist of the 13th century. The Library has the second edition of one of his most important works, *De animalibus*, published in Mantua, in 1479. The fifth best-seller is *Somnia Danielis*, the book of dreams, passed down from the Middle Ages and still popular at the threshold of the *Rinascimento*. It was printed 39 times before 1501. The Library has one copy, the eighth edition, printed in Rome, in 1480. The *Somnia* is followed by Wenzel Faber's astrological predictions, Anianus' *Compotus*, Mandeville's *Itinerarius* and a great number of *Herbals*.

Pedacius Dioscorides is generally accepted as the originator of the *materia medica*. During his travels he described approximately 600 plants, one hundred or so more than Theophrastus. Hippocrates knew around 150 of these. Out of the 600, close to 100 are still in use today. The Library has the 1499 Venetian edition of Dioscorides' *De materia medica* in Greek. Most herbals were picture books, usually with hand colored illustrations that added to their great popularity. The Library has the first edition of the *Hortus sanitatis* printed in Mainz, in 1491. Because of the success of this popular work, printers produced more scientific books on botany.

ΠΕΔΑΚΙΟΥ ΔΙΟΣΚΟΡΙΔΟΥ ΑΝΑΖΑΡΒΕΩΣ
ΠΕΡΙ ΎΛΗΣ ΙΑΤΡΙΚΗΣ ΒΙΒΛΙΟΝ
ΠΡΩΤΟΝ.

C

George Sarton, evaluating the most popular scientific works of the incunabula period, found that the two leading classes were medicine (with 16 works) and astrology (11 works). These were followed by encyclopedic works (6), cosmographies, marvels (6), ethics (5). Others were astronomy, grammar, mathematics and physics, witchcraft, mnemonics, agriculture, chemistry, dreams, herbals, histories, metaphysics, physiognomy and chiromancy.

Indigne regimen sanitatis Salernitanū excellentissimū
pro conseruatione sanitatis totius humani generis
peritissimū. necnon a magistro arnoldo de villa no-
ua cathelono omnium medicorum diuinitū gemma bruliter
ac secundū omnium antiquorum medicorum doctrinā veraci-
ter expolitū nouiter correctū ac emendatū per egregiū
mos ac medicine artis peritissimos doctores montipe-
sulani regentes anno millesimo quadringentesimo octua-
gesimo predicto loco atque moram trahentes.

Textus.

Anglorum regi scripsit Isota tota salerni:
 Si vis incolumē si vis te reddere sanū:
 Curas tolle graues. irasci crede prophānū
 parca mero. cenato parū. nō sit tibi dānū
 Surgere p' epulas. somnū fuge meridianū
 Non mictum retine. nec compime fortiter anum
 Nec bene si serues tu longo tempore diues.

Commentum

*Iste est libellus editus a doctoribus salerniensibus in
 quo inscribunt multa et diuersa pro conseruatione sanita-
 tis humane. et editus est liber ab dñm regis anglie
 Et in textu lecto auctor ponit octo documenta generalia
 pro conseruatione sanitatis de quibus postea specialiter
 per ordinem determinabitur. priuū ergo documentū est q
 homo sanus debetens viuere debet ab eo remouere graues
 curas. nam cure exsiccant corpora. et quo tristicant spi-
 ritus vitales. modo spiritus tristee exsiccant ossa. Et sub
 isto documento etiā comprehendit debet tristicare que limi-
 liter corpora exsiccant et infrigidant. mactem et extenua-
 tionem inducunt cor constringunt. et spiritū obtemperat
 ingenia ebent et rationē impediunt. iudiciū obscurant
 et memoriā obfundunt. Veritatem aliqui pingues et car*

[illegible]

Regimen sanitatis Salernitanum. Paris, Antoine Caillaud, 1483. Incipit the edition with commentary of Arnaldo de Villa Nova. Corrected by Doctores regentes of Montpellier, 1480.

TRACTATVS MAGISTRI ARNALDI
DEVILLANOVADEARTE COGNOS
CENDI VENENA CVM QVIS TIMET
SIBI EA MINISTRARI

Imens de uenenis caueat sibi de manu cuius reci
piet cibos & potus suos. & maxime potum uini.
& at tñ dat de colore odore & sapore oblatorum.

Nam quicquid non fuerit dulcis & delectabilis saporis putā amari acuti acetosi stiptici & pētici erit suspectum. Attamen dolosi decipiunt addendo modicum ex uenenis cum cibis delectabilis saporis & maxime dulcibus acetosis & acutis. Cum insipidis autem sicut cū carnibus & aqua & brodio carniū simplici non possunt sic uenena addi sine mutatione saporis. Quicquid etiam odorem habebit horribilem feridum & illaudabilem suspectum erit & uitandum. necnon ea que uariolorum colorum sunt. sicut farsitia limonia & omnia lassa menta uariis coloribus colorata. Aqua etiam iuxta quam inhabitant animalia seu reptilia uenēosa est multum uitanda.

De ingenio resistēdi uenenis & nocumentis eorū priusq̃
assumantur.

Experdit etiam tunc ut ueneno resistētia preassumā
sicut ficus nux auellana pistate per se uel cum ruta
simul iuncta Ex his etiam sunt cortex pomi citri
& limonis allia & cepe que omnia calida sunt & ideo tutius
sumi possunt tempore temperato & frigido quam tēpore
calido & estiuo.

De signis certis & tactibus q̃ quis iā uenenū assūpsit, aut
aīali uenēso iā morsus fuit & de regimēte eorū in uniuersali.
& primo de modo puocadi uomitū & reitēdi uenenū.

Colon Genl's O.

Arnaldo de Villa Nova. *De arte cognoscendi venena*. Mantua, Johannes Vurster, 1473. Incipit of first edition.



Brunswick, Hieronymus. *Das Buch der Vergift der Pestilenz*. [Strassburg] Hans Grüninger, 1500. First edition. Woodcut from leaf VI.

One of the most sought-after *Regimen pestilentie* was that of Johannes Jacobi's work (the prose version appeared frequently under the name of Canutus) which appeared in 23 editions on the continent and in three editions in England in English. The Library has three editions of the work. It also owns a copy of Simon Pistoris' rare *Declaratio defensiva cujusdam positionis de malo Franco* (Leipzig, 1500) and a copy of the similarly rare work of Bartholomaeus Steber's *A malafranczos morbo Gallorum praeservatio ac cura* (Vienna, 1497-8). The National Library of Medicine's copy of this latter work would appear to be the only one in the United States. The many books and pamphlets describing, arguing about, and offering "sure" treatments for epidemic diseases were not completely useless. These works helped initiate embargos during epidemics and called attention to hygiene.

Medical practice in the 15th century was characterized by quackery and superstition, and a

physician usually believed in astrology. One of the best sellers in this field was Marcus Manilius' *Astronomica*, first published in Nuremberg, in 1473-4. The Library has the 1498-1500 Venetian edition. During the second half of the fifteenth century, Marsilio Ficino was the favorite philosopher-astrologer of both Cosimo and Lorenzo Medici, and he is represented by several incunabula in the Library's collection. At the same time, much interest attended editions of the freedman of Augustus Caesar, C. Julius Hyginus. His *Poetica astronomica* printed in Venice in 1482 by the famous Erhard Ratdolt is present in the Library's incunabula collection. Johann Müller, known as Regiomontanus, is a familiar name to astrologers because of the system of "house division" to which he gave his name. In Nuremberg he published his trigonometrical tables and in Venice, his *Calendarium*, helpful for astrologers and astronomers.

The Library has a copy of the latter published in 1485.

Secundus

CAII PLINII SECVNDI NATVRALIS HISTORIAE LIBER SECVNDVS.



An Finitus Sit Mundus. Et An Vnus. Cap. i.

VNDVM ET HOC Q VOD NOMINE ALIO CAELVM appellari libuit: cuius circūflexu tegūtur cuncta numē eē: credi p est: eternum: immēsum: neq genitum: neq iteritū: unq̄ Huius ex tera idagare: nec iterest: hominū: nec capit hūanā cōiectura mēis Sacer est: æternus: imēsus: totus ī toto: imo uero ip̄e: totū finitus & infinito similis omniū reꝝ certus: & similis incerto. Extra intra cū & cōplexus in sesidemqꝝ rerum naturæ opus: & reꝝ ip̄a natura. furor est mēsurā eius animo quosdā agitalle. atqꝫ p̄dere ausos. Alios rursus occasiōe hinc sumpta: aut his data innumerabiles tradidisse mūdōs: ut totidem reꝝ naturas credi oporteret. Aut si ūa oēs īcubaret: totidē tamen soles totidēqꝫ lunas: & cætera etiā ī uno & im

mensa & innumerabilia sydera: quasi nō eadem q̄stione: semper in terminō cogitationis occurrere de syderio finis alicuius. Aut si hæc īfinitas naturæ omnium artifice possit assignari: nō illud idem ī uno facilius sit intelligi tanto p̄sertim opere. Furor ē p̄fecto: furor: egredi ex eo: & tanq̄ interna eius cūsta plane iam sint nota: ita scrutari extera: quasi uero mēsurā ullius rei possit agē qui sui nesciat: aut mēs hominis uidere: quæ mundus ipse non capiat: De Forma Eius. Ca. ii.

Formam eius: in speciem orbis absoluti globatam esse: nomē ī primis: & cōsensus ī eo mortaliū orbem appellātium: Sed & argumenta rerum docent: nō solum quia talis figura omnibus sui partibus uergit ī sese: ac sibi ipsa tolerāda est: seqꝫ includit & continet nullas: egēs compaginū: nec finem aut initium ullis sui partibus sentiēs: nec quia ad motum quo subide uerti debeat (ut mox apparebit) talis aptissima est: Sed oculorum quoqꝫ probatione: qꝫ conuexus medius qꝫ cūqꝫ cernatur: cum id accidere in alia non possit figura.

De Motu Eius. Cap. iii.

Anc ergo forma eius: æterno & irrequieto ambitu īenarrabili celeritate. xxiii. horarum spatium circumagi solis exortus & occasus haud dubiū reliquē: an sit immēsus: & ideo sensum auriū facile excedens. Tātæ molis rotatæ uertigine assidua sonitus nō equidem facile dixerim: non hercle magis q̄ circūactorum simul tinnitus syderes: suosqꝫ uoluentiū orbes. An dulci quidē & incredibili suauitate cōcentus nobis qui intus agimus iuxta diebus noctibusqꝫ tacitus labitur mūdus: esse innumeras ei effigies aialium rerumqꝫ cunctarū impressas. Nec ut ī uolucrum notamus ouis læuitate continua lubricum corpus: quod clarissimi auctores dixere tenerum. argumentis indicatur quoniā inde deciduis rerum omnium seminibus innumera ī mari præcipue: ac plerūqꝫ confusis mōstrifice digenerantur effigies. præterea uisus p̄batione alibi plaustris: alibi uris: tauri alibi: alibi litteræ figura candiore medio super ærticem circulo. Cursu Mundus Dicatur. Cap. iiii.

Quidem & consensu gentium moueor. Nam quem cosmon græci nomine ornamenti appellauerūt: eum & nos a perfectæ absolutaqꝫ elegātia mundum. Cælum quidem: haud dubie cælati argumēto diximus: ut interpretatur. M. Varro. Adiuvat rerum ordo descripto circulo: qui signifer uocatur i. xii. animalium effigies: & per illas solis cursu cōgruens tot sæculis rō.

De Quattuor Elementis. Cap. v.

Ec de elemētis uideo dubitari quattuor ea esse. igniū summo: inde tot stellarum collucētium illos oculos: proximū spiritus: quem græci nostriqꝫ eodem uocabulo aere appellant Vitalē hunc: & p cuncta rerum meabilem: totoqꝫ cōsertum. Cuius ui suspensam cū quarto aquarum elemēto librari medio spatii tellurē: ita mutuo complexu diuersitatis effici nexum: & leuia ponderibus inhiberi: quo minus euolent. Contraqꝫ grauiā ne ruant suspendi leuibis in sublime tendentibus Sic pari in diuersa nisu ui sua queqꝫ cōsistere irrequieto mundi ipsius cōstricta circuitu: quo semper in se currente imā atqꝫ mediā in toto terram eademqꝫ uniuerso cardine stare pendente librātem p̄ que pendeat ita solam immobilē circa eam uolubili uniuersitate: eandemqꝫ ex omnibus ne: & eademqꝫ omnia inuiti.

De Septem planetis. cap. vi.

Inter hanc celumqꝫ eodem spiritu pendēt certis discreta spatiis. vii. sydera que ab īcessu uocamus errantia: cū errent nulla minus illis. Quorum medius sol fertur āplissima magnitudine ac potestate: nec temporum modo terrarumqꝫ: sed syderum etiam ipsorum celiqꝫ rector. Hūc mundi esse totius animum: ac planus mentem. Hunc principale nature regimen ac numē credere decet opera eius extimātes. Hic lucē rebus ministrat: aufertqꝫ tenebras. hic reliqua syderū oc

Probleumata Aristote lis determinantiā multas

questiones de varijs corporis humani dispositionibus
valde audientibus suis. Cum eiusdem Aristotelis vita
et morte merite descripta. Subiunctis metrum cum in
seriāli glosa sententialibus expositionibus.



Aristotle. *Problemata*. Cologne, Heinrich
Quentell, ca. 1493. Fifth edition, with the *Vita*,
text beginning: Omnes homines. Title page.

Alafranczos morbo galloz preservatio ac Cura a Bartholo- meo Steber Tiennensi artium & medicīne doctore nuper edita.



Steber, Bartholomaeus. *A malafranczos morbo Gallorum
praeservatio ac cura*. [Vienna, Johann Vinterburg, 1497-8]
First edition. Title page.

Tractatus de pestilentia

li Scorra siue mala de franczos Originē. Remediaq;
eiusdem continens. cōpilatus a venerabili viro Magis-
tro Joseph Grunpeck de Burckhausen sup carmina
quedā Sebastiani Biani vtriusq; iuris professoris.

Scorra de Franßois



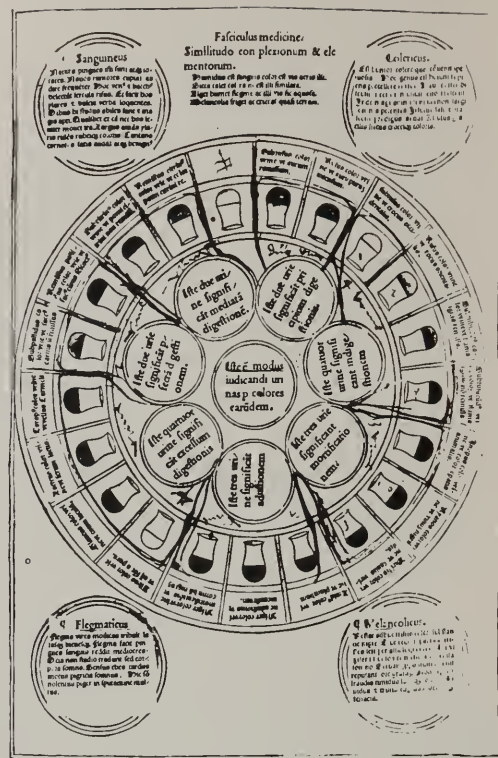
Grünspeck, Joseph. *De pestilentiali
scorra*. Cologne, Cornelis de Zieriksee, ca.
1500. Fifth edition. Title page.

Numerous almanacs were printed, usually on one sheet, helping both physician and members of private households to plan the year in advance: to know what to do, and what to fear, in certain months of the year. The almanacs usually included short medical instructions, depending on the months of the year and the standing of the constellations. One of the early printed almanacs in the Library's possession was published in Nuremberg in Latin in 1487 and is the only copy in the United States. Another almanac of which there is only one copy in the country is in German published by Jakob Honiger in around 1493.

At the end of the century more and more "specialized" works appeared, discussing one or two parts and functions of the human body. These included Gilles de Corbeil's *De urinis* (Padua, 1483), *De pulsibus* (Padua, 1484) and *De urinis et de pulsibus* (Venice, 1494-5) all present in the Library's incunabula collection. Benevenuto Grassus' *De oculis* (Ferrara, 1474), Matteolo de Perugia's *De memoria* (Rome, about 1474, Milan 1475, Rome about 1490) are also present in the Library's collection. Michele Savonarola's *De febribus* was published once in Bologna (1487) and twice in Venice (1496, 1498). The Library has the latter two editions.

The most important author on surgery was Guy de Chauliac. His *Chirurgia* appeared in several French, Italian, Spanish, and Latin editions. The Library owns the Venetian 1480, 1493, 1498 and 1499 editions of the work. Another author of surgery, Guglielmo da Saliceto, is represented in the collection by the French edition of his *La cyrurgie* (1492) and the Italian edition of the same work entitled *La ciroxia vulgarmente fata* (1486).

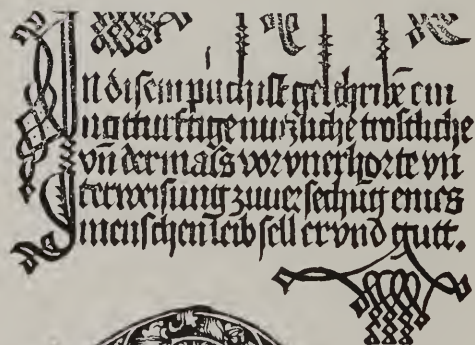
The works specializing in surgery were adequate for the average surgeon of the time. The "general practitioner's" instructional works were the *Practica* and in old German the *Versehung*. A representative work in this field is Valasco da Tarenta's *Practica* (the Library has the 1490 and the 1500 Lyons editions) which discusses the symptoms of sickness followed by the description of the suggested cure. The anonymous *Versehung von Leib, Seele, Ehre und Gut* tries to be more comprehensive. The Library has all three known editions of the work. We may classify as "practica" Johannes de Ketham's *Fasciculus medicinae* even if it does not follow the usual pattern of the practica. It was very popular because of its folio-sized anatomical illustrations which are clear and instructive for the period. The incunabula years witnessed four Latin, one Italian and three Spanish editions. The Library has the 1495 and 1500 Venetian editions in Latin.



Ketham, Johannes de. *Fasciculus medicinae*. Venice, Joannes and Gregorius de Gregoriis, 1495. Uroscopy chart.



Versehung von Leib, Seele, Ehre und Gut. Nuremberg [Peter Wagner, 14]89. First edition. Verso of title page and leaf 1.

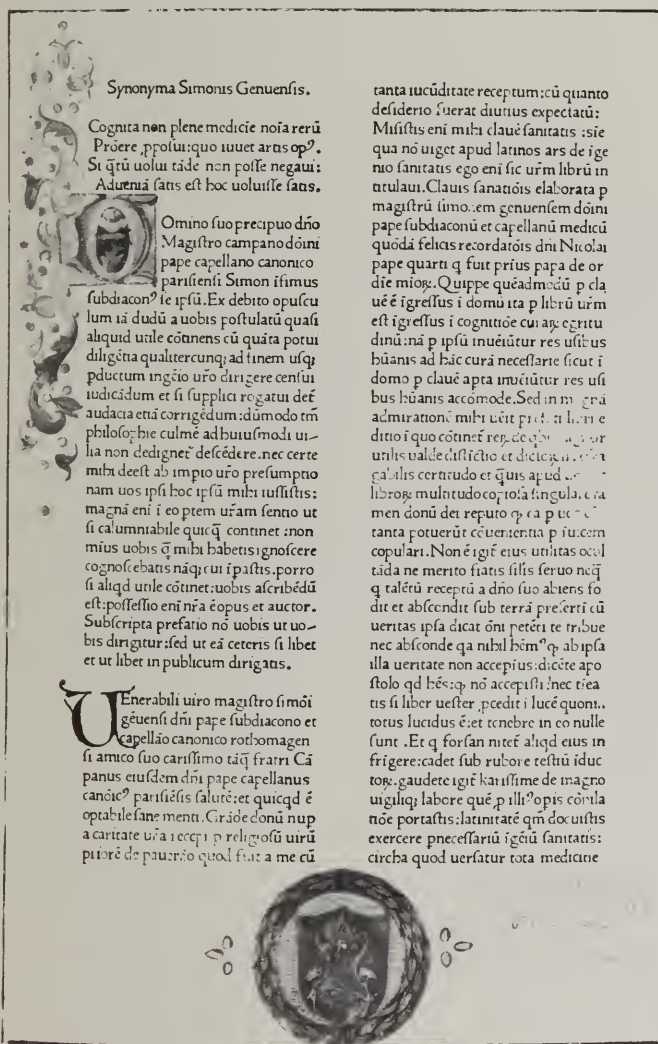


D durch Bre
maynung vnd
Inenhalte soli
chs puchs ver
standen werd.
So ist die der
obuermelten schrist gemess auff die nachhol
genden stuck vnd maynung gesetzt vnd er
grunt mit ferner Inenhalte des das darzu
noturfftig ist. **Z**um ersten auff die verse
hung des leibs inkrackhaye nach dem eine
iden kracken sich in seiner krankhaye selbs
zuersehen vnmuglich. So durch er guter
versehung gar noturfftig vnd von der verse

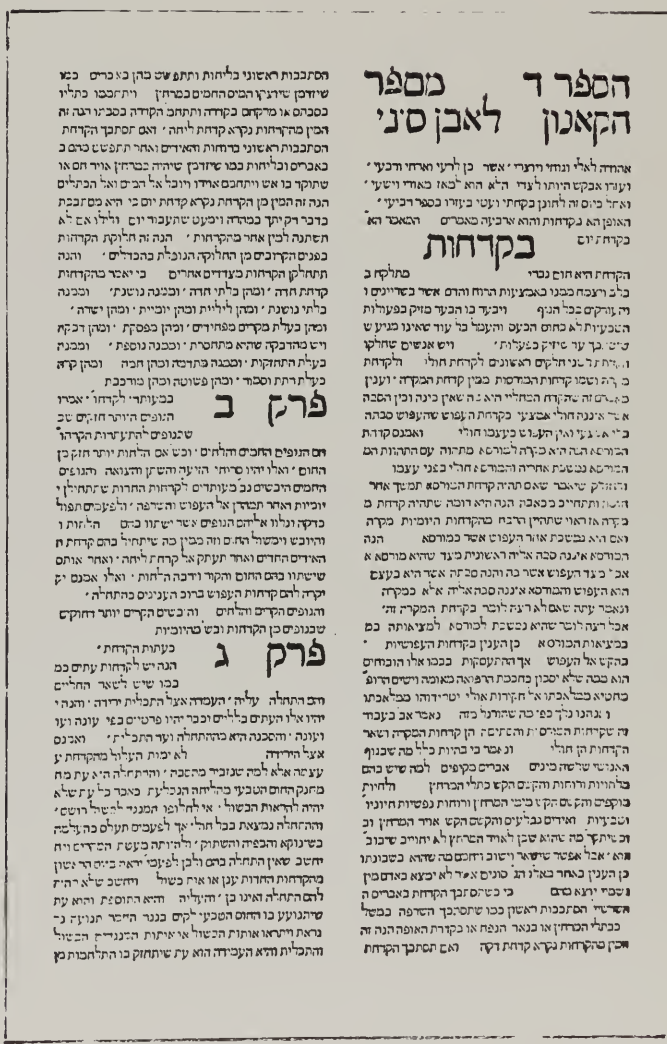
Some of the most sought after and enjoyed readings of the 16th century were encyclopedias, chronicles, and histories. Rhazes (Muhammad ibn Zakariyā, Abū Bakr, al-Rāzī) was the author of one of the great medical encyclopedias of the Arab-speaking world. The Library has a good copy of this incunabulum, the only edition printed in the 15th century, entitled *Liber Elhavi id est Continens artem medicinae* (Brescia, 1486). This work is larger than the popular *Canon* of Avicenna. The most important scientific incunabulum in Hebrew was the *Canon medicinae* by Avicenna (Ibn Sīnā), published in 1491, in Naples. A leading historical work on the "best seller list" is Pliny the Elder's famous *Historia naturalis* published in 18 incunabula editions. This work was one of the main sources of scientific knowledge until the end of the sixteenth

century. The Library has 4 Latin and 2 Italian editions of the work. A very popular work with visitors to the Library is Hartmann Schedel's *Liber Chronicarum*, published in Nuremberg by Anton Koberger in 1493. It contains several hundred illustrations depicting Medieval cities, popes, philosophers, and the most famous medical doctors from the beginning of Western civilization until 1480.

The publication of important collected works of scientific and medical authors began slowly. Not only was there little demand for them, but also the costs of producing the *opera* of voluminous authors were great. For example, Galen's *Opera omnia* (in Latin) was published late (in Venice in 1490) and



Simon of Genoa. *Synonyma medicinae, sive Clavis sanationis*. Milan, Antonius Zarotus, 1473. Large initial "D" in gold, red and blue and coat of arms of owner.



Avicenna. *Canon medicinae*. Naples, Azriel ben Joseph de Gunzenhausen, 1491. First page of Hebrew text in vol. III.



Mādragora Capitulum

Andragora
mon uel ne
rar i Die
mēſſlich daz zweyer
L yn der man. Die
In dē bñch genant
ken vns die meſter
dragora ſy ſale vñ
ren grade. Vñ dē
ge dē meſter An
daz ſpizer ſketer
lich meſter ſpreche
nuzer werde in der
menſch. aber wie dē
die alte lēde vñ ba
tuer. Jē die mei
auch in dē bñch er
chen daz dñ wir
den vñ geſomeret
ſehen als mannen
ſpreche die meſter
warbere vñ pñ ba
meret ſint vñ ſolch
nir in der erde ſunder ſie werde gemacht vñ kunſten vñ aljo geſalt.

altun Man ·rel vij·

latine grece anti
ceon. arabice lebda
meſter ſpreche ges
hand ſy der altun
ander die frauwe
circa inſtās ſchri
vñ ſpreche daz mā
drucken an dē drit
iſt auch die meynū
centie. Die frauwe
wander man. Es
daz die freulich ge
arzyn vñ die
ſy ſo drucket man
ken dñake eyn na
ſter ſchriken vñ
ca inſtās vñ ſpre
geln ſkaffet wer
ſint glück dē meſ
vñ frauwe. Dar zu
daz eſ ſolichs lēp
ke vñ nir aljo for
würgeln wachſen

Gart der Gesundheit. Mainz. Peter Schoeffer, 1485. The male mandragora. Colored in brown, green and yellow.



Hortus sanitatis. Mainz. Jacob Meydenbach, 1491. First edition. Chopping of herbs. Colored in pink, yellow and green.

only once during the incunabula years partly because of the great expense. While we have no knowledge of the exact price of the first Latin edition, A. Asulanus, who edited and published the first Greek edition of the same work (Venice, 1525), charged 30 golden florins for the three large unbound volumes in Basel in 1526. By comparison, a physician earned an average of 16 golden florins a year, a baker 12, and a schoolmaster 3.5 during the same period. The National Library of Medicine has both the 1490 (Latin) and the 1525 (Greek) Venetian editions.

Aside from its historical and scholarly importance, any incunabula collection is a great treasure for a library: a treasure in the sense of "first," in the sense of "old" and in the sense of "rare." Fine contemporary or later bindings and illustrations add to the esthetic feeling of holding such a book. From the scientific point of view, however, these works often have shortcomings. First, as has already been mentioned, the early printers did not publish the

best ancient and mediaeval literature, but only what seemed likely to sell best. Second, during the Middle Ages many Greek authors were available only in corrupt Latin translations. The world had to wait another century or so until better-educated printers, including famous humanist-printers, republished the Greek works in new translations by humanist scholars such as Niccolò Leonicensio, Gulielmus Copus, Guillaume Plancy, Johann Reuchlin, and others. Items in the National Library of Medicine's incunabula collection have been selected with great care by scholar librarians since the end of the last century. Consequently the Library has one of the finest collections of medical incunabula in the world. The Library's History of Medicine Division continues to build the collection, albeit at a slow rate because of the rarity and cost of such works. The collection is an invaluable resource for scholars studying the history of ancient, medieval and Renaissance medicine and science.

